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NOTE BY THE SECRETARY-GENERAL

The Secretary-General has the honour to transmit to the Security Council the attached revised plan for future ongoing monitoring and verification of Iraq's compliance with paragraph 12 of Part C of Security Council resolution 687 (1991) and with the requirements of paragraphs 3 and 5 of resolution 707 (1991) submitted by the Director-General of the International Atomic Energy Agency (IAEA).

PLAN FOR FUTURE ONGOING MONITORING AND VERIFICATION OF IRAQ'S COMPLIANCE WITH PARAGRAPH 12 OF PART C OF SECURITY COUNCIL RESOLUTION 687 (1991) AND WITH THE REQUIREMENTS OF PARAGRAPHS 3 AND 5 OF RESOLUTION 707 (1991)

Submitted by the Director General of the International Atomic Energy Agency

I. INTRODUCTION

1. In paragraph 13 of Security Council resolution 687 (1991), adopted on 3 April 1991, the Director General of the International Atomic Energy Agency (hereinafter referred to as the "IAEA" or "Agency") was requested by the Security Council to carry out immediate on-site inspection of Iraq's nuclear capabilities and to develop and carry out a plan for the destruction, removal or rendering harmless of items prohibited to Iraq under paragraph 12 of resolution 687. The Special Commission, established in accordance with paragraph 9 of resolution 687, was given a role in the nuclear area under resolution 687 of assisting and co-operating with the IAEA and designating sites to be inspected.

2. In paragraph 13 of resolution 687, the Director General of the IAEA was further requested - with the assistance and co-operation of the Special Commission - to submit to the Security Council for its approval a plan for future ongoing monitoring and verification of Iraq's compliance with its obligations under paragraph 12 of resolution 687.

3. The IAEA submitted to the Security Council for its approval on 29 July 1991 the plan referred to in paragraph 2 above. As the plan was originally developed while immediate on-site inspection was still ongoing, and while the plan for the destruction, removal or rendering harmless of proscribed items was still in an early stage of implementation, the plan was, as indicated therein, provisional in nature and subject to modification upon further direction from the Security Council and upon consideration of the results of the ongoing inspections.

4. As a consequence of the adoption by the Security Council on 15 August 1991 of resolution 707 (1991), and based on the results of the on-site inspections performed to date, the Director General of the IAEA now submits a revised plan (hereinafter referred to as "the plan") for approval by the Security Council.

5. The plan incorporates the additional obligations of Iraq under resolution 707 and the corresponding monitoring and verification activities of the Agency.

6. Although resolution 687 does not specify the party which should be assigned the responsibility for implementation of the plan, the Agency's extensive experience with inspection and verification activities in the nuclear field, which led to the Security Council's asking the Agency to take the lead during the first two phases under paragraph 12 of resolution 687, the need for continuity in the implementation of future measures, and the evident cost benefit of being able to draw on an existing infrastructure, suggest that the Agency be assigned the task of carrying out the plan. The plan was drafted accordingly. It is expected that the verification and monitoring activities will be administered and operated by a special unit in the IAEA Secretariat. For technical and practical reasons, the operation by the Agency, appropriately co-ordinated with the Special Commission or its successor, of field offices in Baghdad is also envisaged.

7. In accordance with the Agency's mandate under resolutions 687 and 707, and as provided for in Articles IX and VII of the Agreement Governing the Relationship between the United Nations and the International Atomic Energy Agency(INFCIRC/11)[1], the Agency will report on the implementation of the plan to the Security Council.

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1) Article IX provides that the Agency "shall co-operate with the Security Council by furnishing to it at its request such information and assistance as may by required in the exercise of its responsibility for the maintenance or restoration of international peace and security."

Article VII provides inter alia that, "At the invitation of the Security Council, the Director General may attend its meetings to supply it with information or give it other assistance within the competence of the Agency."

8. Resolution 707 obliges Iraq, inter alia, to "halt all nuclear activities of any kind, except for use of isotopes for medical, agricultural or industrial purposes, until the Security Council determines that Iraq is in full compliance with resolution 707 and with paragraphs 12 and 13 of resolution 687, and the IAEA determines that Iraq is in full compliance with its safeguards agreement with that Agency". So long as the proscriptions under resolution 707 remain operational, the Agency will secure the nuclear material, equipment and facilities which Iraq is allowed to keep and use under the terms of resolution 687 and verify that they are not used for any nuclear activity except as permitted under resolution 707. The Agency will also verify that nuclear material and isotopes are not produced indigenously by Iraq, and that isotopes held or imported by Iraq are used only for medical, agricultural or industrial purposes.

9. The comprehensive sanctions established under Security Council resolution 661 (1991) for application by all States against Iraq, the prohibition against Iraq's acquisition of, and research and development related to, nuclear weapons and nuclear-weapons-usable material, as set out in paragraph 12 of resolution 687, and the prohibition in resolution 707 against all nuclear activities in Iraq except the use of isotopes for medical, agricultural or industrial purposes, all of which were imposed under Chapter VII of the Charter of the United Nations, carry with it the obligation of other States to respect the sanctions and prohibitions until such time as they are lifted by the Security Council and entails the acceptance of an obligation to report intended sales or supplies to Iraq of items not proscribed under resolution 687 or 707.

10. This plan, and the annexes thereto, which constitute an integral part of the plan, will enter into force upon approval by the Security Council. It will govern all Agency activities in Iraq pursuant to resolutions 687 and 707. The duration of the plan, as well as the scope and content of the plan, remain subject to further decisions and directives of the Security Council.

11. Security Council resolution 687 notes that the actions required of Iraq, including those relevant to nuclear weapons and nuclear-weapons-usable material, represent steps toward the goal of establishing in the Middle East a zone free from weapons of mass destruction. While the terms of any such zone agreement would have to be negotiated between the parties to the arrangement, some of the verification features envisaged in this plan may be of interest in future discussions about verification in such a zone.

II. THE PLAN

A. Relevant Decisions of the Security Council

12. In accordance with paragraph 12 of resolution 687, Iraq is obliged:

- not to acquire or develop nuclear weapons or nuclear-weapons-usable material or any subsystems or components or any research, development, support or manufacturing facilities related to the above;

- to submit to the Secretary-General and the Director General of the IAEA within 15 days of adoption of the resolution a declaration of the locations, amounts and types of items specified above;

- to place all of its nuclear-weapons-usable materials under the exclusive control, for custody and removal, of the IAEA, with the assistance and cooperation of the Special Commission appointed by the Secretary-General in accordance with paragraph 9(b) of the resolution;

- to accept, in accordance with the arrangements provided for in paragraph 13 of the resolution, urgent on-site inspection and the destruction, removal or rendering harmless, as appropriate, of such items; and

- to accept the plan referred to in paragraph 13 for the future ongoing monitoring and verification of its compliance with these undertakings.

13. Pursuant to paragraph 13 of the resolution 687, the Director General of the International Atomic Energy Agency was requested, with the assistance and cooperation of the Special Commission:

- to carry out immediate on-site inspection of Iraq's nuclear capabilities based on Iraq's declarations and the designation of any additional locations by the Special Commission;

- to develop a plan for submission to the Security Council within forty-five days following adoption of the resolution calling for the destruction, removal, or rendering harmless as appropriate of the items proscribed under in paragraph 12 of the resolution, and to carry out the plan within forty-five days following its approval by the Security Council; and

- to develop a plan, taking into account the rights and obligations of Iraq under the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968, for the future ongoing monitoring and verification of Iraq's compliance with paragraph 12 of the resolution, including an inventory of all nuclear material in Iraq subject to the Agency's verification and inspections to confirm that Agency safeguards cover all relevant nuclear activities in Iraq, to be submitted to the Security Council for approval within 120 days of adoption of the resolution.

14. Under paragraph 3 of resolution 707, the Security Council demands that Iraq

- provide full, final and complete disclosure, as required by resolution 687 (1991), of all aspects of its programmes to develop weapons of mass destruction and ballistic missiles with a range greater than 150 km, and of all holdings of such weapons, their components and production facilities and locations, as well as all other nuclear programmes, including any which it claims are for purposes not related to nuclear-weapons-usable material, without further delay;

- allow the Special Commission, the IAEA and their inspection Teams immediate, unconditional and unrestricted access to any and all areas, facilities, equipment, records and means of transportation which they wish to inspect;

- cease immediately any attempt to conceal, or any movement or destruction of any material or equipment relating to its nuclear, chemical or biological weapons or ballistic missile programmes, or material or equipment relating to its other nuclear activities without notification to and prior consent of the Special Commission;

- make available immediately to the Special Commission, the IAEA and their inspection Teams any items to which they were previously denied access;

- allow the Special Commission, the IAEA and their inspection Teams to conduct both fixed wing and helicopter flights throughout Iraq for all relevant purposes including inspection, surveillance, aerial surveys, transportation and logistics without interference of any kind and upon such terms and conditions as may be determined by the Special Commission, and to make full use of their own aircraft and such airfields in Iraq as they may determine are most appropriate for the work of the Commission;

- halt all nuclear activities of any kind, except for use of isotopes for medical, agricultural or industrial purposes until the Security Council determines that Iraq is in full compliance with this resolution and paragraphs 12 and 13 of resolution 687 (1991), and the IAEA determines that Iraq is in full compliance with its safeguards agreement with that Agency;

- ensure the complete implementation of the privileges, immunities and facilities of the representatives of the Special Commission and the IAEA in accordance with its previous undertakings and their complete safety and freedom of movement;

- immediately provide or facilitate the provision of any transportation, medical or logistical support requested by the Special Commission, the IAEA and their inspection Teams;

- respond fully, completely and promptly to any questions or requests from the Special Commission, the IAEA and their inspection Teams.

15. Paragraph 5 of resolution 707 further requires that the Government of Iraq forthwith comply fully and without delay with all its international obligations, including those set out in resolution 707, in resolution 687, in the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968 (NPT) and in its safeguards agreement with the IAEA (INFCIRC/172, 29 February 1972).

B. General Provisions

16. Iraq's obligations under paragraph 12 of resolution 687 and paragraph 3 of resolution 707 are broader in scope than the obligations which are undertaken under the Non-Proliferation Treaty and which are verified by the IAEA. While the approaches and techniques to be used under the present plan draw upon the Agency's safeguards experience, the scope and intensity of verification and monitoring under this plan are much greater in order to satisfy the requirements of Security Council resolutions 687 and 707 and to create confidence that the restrictions imposed upon Iraq in the nuclear field are actually complied with.

17. The safeguards agreement concluded with Iraq pursuant to the NPT shall continue to be in force. The verification activities pursuant to this plan will be carried out in a manner that takes into account the safeguards activities required under the safeguards agreement.

18. The activities under the plan for the future ongoing monitoring and verification of Iraq's compliance with paragraph 12 of resolution 687 and the nuclear aspects of paragraphs 3 and 5 of resolution 707 will be carried out with the assistance and co-operation of the Special Commission, or such other body as may be designated by the Security Council to carry out monitoring and verification activities relevant to Iraq's compliance with paragraph 10 of resolution 687 (chemical, biological and missile). The Agency will continue to provide information concerning the conduct and results of Agency inspections and related activities in order to assist the Special Commission in carrying out this task.

19. Financing of the verification and monitoring activities by the Agency in Iraq under the present plan will be secured by the United Nations.

C. Obligations of Iraq

20. Pursuant to its obligations as set forth in the relevant paragraphs of the Security Council resolutions quoted above, Iraq is

(a) prohibited under paragraph 12 of resolution 687 from acquiring or developing nuclear weapons or nuclear-weapons-usable material or any subsystems or components or any research, development, support or manufacturing facilities related thereto (see Annexes I and 3);

(b) required under paragraph 3 of resolution 707 to halt all nuclear activities of any kind except for use of isotopes for medical, agricultural or industrial purposes (see Annexes I, 3 and 4); and

(c) required under paragraph 3 of resolution 707 to cease immediately any attempt to conceal, and any movement or destruction without notification to and prior consent of the Special Commission, of material or equipment relating to its nuclear weapons or other nuclear activities. This obligation is without prejudice to the obligation of Iraq to carry out, at the request of the Agency, the movement, destruction or rendering harmless of nuclear material, equipment or other items.

21. Iraq shall accept unconditionally all of the rights of the IAEA enumerated under section E of this plan. Iraq shall take no action to interfere with, impede, or obstruct the exercise of these rights by the Agency. Iraq shall take all measures which, in the view of the Agency, are necessary to facilitate the full exercise by the Agency of its rights under the plan, including, but not limited to:

(a) the designation of the Iraqi authority responsible for liaison with the Agency, and the name or names of the liaison officers within that authority who shall take the necessary measures to secure for the Agency the effective implementation of the Agency's rights laid down in the plan;

(b) notification to the Agency, immediately upon receipt of the name of the IAEA Chief Inspector for an inspection, of the name of the individual who will be the Iraqi Inspection Representative for the inspection;

(c) ensuring the safety and security of Agency personnel and property and the provision, upon request by the Agency, of appropriate escort, medical and other support personnel;

(d) the provision, at no cost to the Agency, of premises that may be necessary for the fulfillment of the Agency's functions in Iraq under the plan; and

(e) the acceptance of United Nations registration of means of transport on land, sea and in the air and United Nations licensing of the operator thereof.

22. Within 30 days of approval of the plan, Iraq shall provide to the Agency, and subsequently maintain current, information in accordance with Annex 2 on the following:

(a) an inventory of all nuclear material in Iraq, as defined in Annex 1;

(b) an inventory of all facilities, installations and sites in Iraq where nuclear activities of any kind, including but not limited to research facilities, laboratory-scale installations and pilot plants, have been or are carried out, or which are suitable for carrying out such activities;

(c) an inventory of all material, equipment and items in Iraq identified in Annex 3;

(d) an inventory of all isotopes in Iraq used for medical, agricultural or industrial applications as identified in Annex 4;

(e) information on existing and proposed programmes of nuclear activities in Iraq for the next five year period; and

(f) an inventory of all facilities, installations and sites in Iraq which are provided with any means of supply of electricity exceeding 10 MWe.

23. Iraq shall also provide to the Agency:

(a) complete design information for any planned nuclear facility or installation in Iraq 180 days before the start of construction of any such facility or installation;

(b) advance information on proposed imports and exports of any nuclear materials and isotopes, and non-nuclear material, equipment and items identified in Annexes 1, 3 and 4; and

(c) at the request of the Agency, any other information or data which the Agency requires to enable it to monitor Iraq's compliance with resolutions 687 and 707 or any other relevant Security Council resolutions.

24. Nothing in paragraphs 22 or 23 shall be construed as permitting activities, or the import, supply, sale or use of items, to the extent proscribed under Security Council resolutions 687 or 707 or any other relevant resolution of the Security Council.

25. Should Iraq require for use in an activity not prohibited under resolutions 687 and 707 any item in Iraq identified in Annex 3 as not proscribed under resolution 687, or require the importation into Iraq of isotopes for use in an activity identified in Annex 4, Iraq shall submit, prior to such use or import, respectively, a request to the Director General of the IAEA, specifying precisely the item and the quantities required, the facility, installation or site to be involved in activities with the item, the purpose of its use and the country of export of the isotopes. The Director General of the IAEA shall examine the request and, with the assistance and co-operation of the Special Commission or its successor, make a decision with regard to the disposition of the request, including any special arrangements which the Director General considers necessary.

26. Should Iraq require the importation for use in an activity not prohibited under resolution 687 or 707 of any item identified in Annex 3 as not proscribed under resolution 687, Iraq shall submit prior to import a request to the Committee established by the Security Council under paragraph 6 of resolution 661 (1990), or such other body designated by the Security Council for that purpose, through the Director General of the IAEA, specifying precisely the item and the quantities required, the facility, installation or site to be involved in activities with the item and the purpose of its use. The Director General of the IAEA, with the assistance and co-operation of the Special Commission, shall examine the request and make a recommendation to the Committee with regard to disposition of the request, including any special arrangements considered necessary.

27. At such time as, pursuant to paragraph 3(vi) of resolution 707, the Security Council determines that Iraq is in full compliance with resolution 707 and with paragraphs 12 and 13 of resolution 687 and the IAEA determines that Iraq is in full compliance with its safeguards agreement with the Agency, Iraq may seek to initiate nuclear activities which are not prohibited by resolution 687. To do so, Iraq shall submit a request to the Security Council specifying precisely the activity, the facility, installation or site where it is to be carried out, and the material or other items to be involved. In considering and examining the request, the Security Council may request the advice, assistance and co-operation of the IAEA and the Special Commission or its successor. Iraq shall not undertake any such nuclear activity until the Security Council has approved the activity.

D. Obligations of other States

28. Paragraphs 24, 25 and 27 of Security Council resolution 687, inter alia, direct States not to provide to Iraq any of the items proscribed in paragraph 12 of that resolution.

29. Until such time as the Security Council and the IAEA make the determinations called for in paragraph 3 (vi) of resolution 707, States shall also be barred from supplying to Iraq any other nuclear material and any materials, equipment, facilities, other items or training which are especially designed or prepared for use in nuclear activities, except as related to the use of isotopes for medical, agricultural and industrial activities.

30. (a) States shall provide the Agency, 60 days in advance, with full and complete reporting of intended exports to Iraq of isotopes for medical, agricultural and industrial activities to the extent not prohibited by relevant Security Council resolutions as identified in Annex 4. States shall also provide the Agency, 60 days in advance, with full and complete reporting of intended exports to Iraq of any item identified in Annex 3 as not prohibited under resolution 687 for use in an activity not prohibited under resolutions 687 and 707. Transfers of items identified in Annexes 3 and 4 shall be subject to prior approval by the Agency in accordance with the provisions of paragraph 25 or 26, as appropriate.

(b) At such time as the constraints imposed by resolution 707 are lifted, States shall also provide the Agency, 60 days in advance with full and complete reporting of intended exports to Iraq of any item identified in Annex 3 as not prohibited under resolution 687, technological information, including training, and any other relevant items which could be used in nuclear activities not prohibited under resolution 687 (see Annex 1). Transfers of such items, information and training shall be subject to prior approval by the IAEA, and shall only be transferred for use in activities authorized by the Security Council under the provisions of paragraph 27.

E. Rights of the IAEA

31. Without prejudice to the rights which the Agency has under the safeguards agreement with Iraq, under the Agreement on the Privileges and Immunities of the IAEA, and under the exchange of notes between the Secretary-General and the Foreign Minister of Iraq, which entered into force on 14 May 1991 and which applies to the Agency mutatis mutandis, the Agency shall have the following rights:

(a) to carry out inspections, at any time and without hindrance, of any site, facility, area, location, activity, material or other item in Iraq upon designation by the Special Commission or its successor, or upon its own initiative. Iraq shall provide immediate and unimpeded access to, and shall take the measures necessary to enable inspectors to arrive at, the location where inspection activities are to be carried out by the time notified by the Agency;

(b) to inspect any number of sites, facilities, areas, locations, activities, materials or items simultaneously or sequentially;

(c) to conduct unannounced inspections and inspections upon short notice;

(d) to secure any site, facility, area, location, activity, material or item to be inspected and prevent any material or other item from being taken to or from the site until the inspection is concluded;

(e) to stop and inspect vehicles, ships, aircraft or any other means of transportation within Iraq. This also includes the right of the Agency to restrict and/or stop movement of suspected material, equipment or other items;

(f) to inspect imports or exports of material and other items upon arrival or departure;

(g) to establish special modes of monitoring and inspection, including prolonged or continuous presence of inspectors, use of instruments and other arrangements to facilitate monitoring and verification.

(h) to secure full and free access at any time to all sites, facilities, areas, locations, activities, material and other items, including documentation, all persons and all information which, in the Agency's judgement, may be necessary for its monitoring and verification activities. This includes unimpeded access to all nuclear material, facilities and installations, as well as equipment and non-nuclear material relevant to Iraq's undertakings, and all documentation related thereto;

(i) to request, receive, examine, retain, copy and remove any record, data and information, including documentation; to examine and photograph, including by videotaping, any activity or item; and to retain and move any item;

(j) to conduct interviews with any personnel at any site, facility, area or location under inspection, and with any Iraqi official;

(k) to install containment and surveillance equipment and other equipment and devices and to construct facilities for observation, testing, verification, monitoring and inspection activities;

(l) to verify inventories, and to take and analyze with its own instrumentation, or to request Iraq under the observation of Agency inspectors to take and/or analyze, samples, and to remove and export samples for off-site analysis;

(m) to mark, tag, or otherwise identify any material or other item;

(n) to use its own instrumentation to collect data during inspections and aerial overflights, including photographic, video, infrared and radar data.

32. The Agency shall also have the right:

(a) to unrestricted freedom of entry into and exit from Iraq, without delay or hindrance, of Agency officials and experts, property, supplies, equipment, including means of transport, and other items. No visas shall be required of such personnel travelling on a United Nations laissez-passer or certificate and possessing an inspection assignment document; Iraq shall ensure prompt issuance of visas of entry and exit for such personnel as may not possess a United Nations laissez-passer or certificate;

(b) to unrestricted freedom to move within Iraq, without advance notice, delay or hindrance of Agency officials and experts, property, supplies, equipment, including means of transportation, and other items. Iraq shall, at the request of the Agency, provide means of transportation, maps or other necessary information;

(c) to remove from Iraq any material and any other item, including documentation;

(d) to use its own means of transport, including fixed- and rotary-wing aircraft for overflights, throughout Iraq for all relevant purposes, including inspection, surveillance, transportation and/or logistics;

(e) to use airfields in Iraq for purposes determined by the Agency including landing, take-off, basing, maintenance, refueling and other support. Iraq shall secure priority clearance for aircraft used by the Agency;

(f) to communicate from any place within Iraq, and without censorship or other hindrance, by radio, satellite or other forms of communication and to connect with the IAEA and the United Nations by radio and satellite network, as well as by telephone, telegraph and other means of communication. Iraq shall, upon request of the Agency, provide appropriate means of communication;

(g) to use codes and receive papers, correspondence and other items by courier or sealed bags; and

(h) to fly the United Nations flag on premises and means of transport.

33. The Agency shall have the right to make its own arrangements to ensure the safety and security of its personnel and property and to take custody of any material or item.

F. National Implementation Measures

34. Iraq shall adopt the necessary measures to implement its obligations under resolutions 687 and 707, and other relevant Security Council resolutions, and the present plan, in particular to prohibit all natural and legal persons under Iraq's jurisdiction or control from undertaking anywhere any activity that is prohibited for Iraq by resolution 687 or 707, by other relevant Security Council resolutions or by the present plan. Iraq shall enact penal laws to secure enforcement of these prohibitions.

35. Iraq shall inform the IAEA of the legislative and administrative measures taken to implement resolutions 687 and 707, other relevant Security Council resolutions and the plan not later than 30 days after the approval by the Security Council of the plan and thereafter as determined by the IAEA.

G. Non-compliance

36. Should the IAEA discover any item, including documentation, that Iraq, under resolutions 687 or 707, is obliged to yield to the IAEA for destruction, removal or rendering harmless, the IAEA shall have the right to take it into

custody and shall provide for its disposal, as appropriate. Iraq shall retain no ownership interest in items to be destroyed, removed or rendered harmless pursuant to resolution 687 or the plan.

37. Should the IAEA discover any activity taking place in contravention of resolutions 687 or 707, it shall have the right to call upon Iraq to halt the activity and to prevent its recurrence. The IAEA shall also have the right to take any prohibited item involved into custody and shall provide for its disposal, as appropriate.

38. Findings by the IAEA that indicate that Iraq is not in compliance with its obligations under resolution 687 or 707 or the plan shall be brought to the attention of the Security Council.

39. Findings by the IAEA that Iraq is not in compliance with its obligations under the safeguards agreement between Iraq and the IAEA shall, in accordance with the safeguards agreement and the Statute of the Agency, be reported to the Security Council.

H. Reports

40. The IAEA shall, through the Secretary-General, report to the Security Council every six months, and at any other time the Security Council may request, on the implementation of the plan.

I. Revisions

41. The plan may only be revised by the Security Council. The IAEA may, however, after informing the Security Council, update and revise the Annexes in the light of information and experience gained in the course of the implementation of resolutions 687 and 707 and of the plan. The IAEA shall inform Iraq of any such change.

J. Entry into Force and Duration

42. The present plan shall enter into force immediately upon its approval by the Security Council. The duration of the plan shall be determined by the Security Council.

LIST OF ANNEXES

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ANNEX 1

DEFINITIONS

For the purposes of UN Security Council Resolutions 687 and 707, the following definitions will be adopted:

1. NUCLEAR MATERIAL

1.1 "Source material"
Uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound or concentrate.

1.2 "Special fissionable material"
Plutonium-239; uranium-235; uranium-233; uranium enriched in the isotopes 235 or 233; any material containing one or more of the foregoing.

1.3 "Nuclear-weapon-usable material"
Nuclear material that can be used for the manufacture of nuclear explosive components without transmutation or further enrichment, such as plutonium containing less than 80% plutonium-238, uranium enriched to 20% uranium-235 and uranium-233 or more; any chemical compound or mixture of the foregoing. Plutonium, uranium-233 and uranium enriched to less than 20% uranium-235 contained in irradiated fuel do not fall into this category.

2. NUCLEAR ACTIVITIES

2.1 - 2.9 (inclusive) refer to activities prohibited under both Resolutions 687 and 707.

Any activity such as research and development, design, manufacturing, import of systems, equipment and components, pilot plant and plant construction, commissioning and operation, or utilization in one or more of the following:

2.1 Production of nuclear weapons

2.2 Production and any use of nuclear-weapon-usable material

2.3 Production of metals or alloys containing plutonium or uranium.

2.4 Weaponization
This covers the research, development, manufacturing and testing required to make nuclear explosives from special fissionable material.

2.5 Nuclear fuel fabrication using plutonium, uranium-233, uranium enriched to 20% or more in uranium-235.

2.6 Import, construction or use of research and power reactors of any kind utilizing uranium enriched to ≥ 20% in uranium-235, uranium-233, plutonium or MOX as a fuel or any reactor designed specifically for plutonium production. This includes critical and sub-critical assemblies.

2.7 Reprocessing of irradiated fuel
Including the use of hot cells and associated equipment

2.8 Enrichment of uranium in isotope 235 and any preparatory steps in this process, including the preparation of UCl_4 and UF_6.

2.9 Production and separation of the isotopes of plutonium, hydrogen, lithium and boron

2.10 - 2.18 (inclusive) refer to activities, permitted under resolution 687 but prohibited under 707.

Any activity such as research and development, design, manufacturing, import of systems, equipment and components, pilot plant and plant construction, commissioning and operation, or utilization in one or more of the following:

2.10 Import, construction or use of research and power reactors of any type utilizing natural uranium or uranium enriched to less than 20% in uranium-235 as a fuel. This includes critical and sub-critical assemblies, but excludes reactors specifically designed for plutonium production.

2.11 Prospecting, mining or processing of ores containing uranium and/or thorium

2.12 Preparation of chemical compounds containing uranium enriched to less than 20 % in uranium-235 and thorium, excluding the preparation of UCl_4 and UF_6.

2.13 Nuclear fuel fabrication using natural uranium or uranium enriched to less than 20% in uranium-235.

2.14 Processing and disposal of radioactive wastes

2.15 Nuclear fusion experimental devices based on magnetic or inertial confinement, including diagnostics

2.16 Production of isotopes both radioactive and stable. The production of the isotopes of plutonium, hydrogen, lithium, boron and uranium is prohibited.

2.17 Import, construction and use of neutron sources, electron accelerators, particle accelerators, heavy ion accelerators

2.18 Research on radiation physics and chemistry and on the physical and chemical properties of isotopes except in area relevant to items 2.19, 2.20 and 2.21

2.19-2.21 (inclusive) refer to activities permitted under Resolution 707

2.19 Application of radiation and isotopes in food and agriculture

2.20 Applications of radiation and isotopes in medicine

2.21 Application of radiation and isotopes in industrial processes

ANNEX 2

PROVISIONS RELATED TO INFORMATION REQUIREMENTS

1. The initial information under paragraph 22 of the plan to be submitted no later than 30 days after the adoption of the plan by the Security Council shall cover the period from 1 January 1989. Subsequent complete information shall be provided each 15 January and 15 July and shall cover the six-month period prior to the provision of the information.

2. Whenever the information that Iraq is required to provide under paragraph 22 of the plan is equal to nil, Iraq shall provide nil returns and confirm this at monthly intervals.

3. The inventory of nuclear material referred to in paragraph 22(a) of the plan shall include the quantity, form, composition, location and current use of such material, including nuclear material containing uranium or thorium which has not reached the composition and purity suitable for fuel fabrication or for being isotopically enriched. For this purpose, the term "use" shall also include storage. The inventory shall be updated at monthly intervals.

4. The information on facilities, installations or sites to be provided under the plan shall, for each facility, installation or site, include:

   (a) the name of the facility, installation or site and of the owner, company or enterprise operating the facility, installation or site;

   (b) the location of the facility, installation or site;

   (c) a meaningful description of all types of activities at the facility, installation or site;

   (d) the source(s) of the financing of the facility, installation or site and of its activities;

   (e) the design of the facility, installation or site, including blueprints and photos as built;

   (f) precise indication where material or other items, including equipment, specified in the plan or in Annexes are present, specifying where applicable, building, room, place within the room;

   (g) a detailed description of activities related to the material, other items, equipment or processes specified in the plan or in Annexes 3 and 4, including as applicable technical characteristics, material flow and process flow diagrams.

5. The location of a facility, installation or site shall be specified by means of the address and a site diagram. Each diagram shall be drawn to scale and shall indicate the boundaries of the facility, installation or site, all road and rail entrances and exits, and all structures on the facility, installation or site, indicating their purpose. If the facility, installation or site is located within a larger complex, the diagram shall specify the exact location of the facility, installation or site within the complex. On each diagram, the geographic coordinates of a point within the facility, installation or site shall be specified to the nearest second.

6. The inventory referred to in paragraph 22(c) of the plan on non-nuclear materials, equipment and items shall include specification of each item, including its packaging, the number and quantity of the item(s), and, where applicable, quantity, form and composition of such items, as well as the location and use (including storage) of all items on the inventory. The inventory shall be updated at monthly intervals.

7. The information to be provided under paragraph 22(d) of the plan on the inventory of all types of isotopes used for medical, agricultural or industrial purposes shall, for each type of isotope, include the quantity, form, composition, location, list of facilities, installations or sites where produced and used (including storage), and the purpose for which used. The inventory shall be updated at monthly intervals.

8. The information on the nuclear programme to be provided under paragraph 22(e) of the plan shall cover the subsequent five years. The information shall be updated on an annual basis, extending until such time as Agency activities under the plan cease. Any proposed change to that programme shall be notified to, and subject to approval by, the Agency before they are made.

9. The information on each import or export to be provided under paragraph 23(b) of the plan shall include quantity, form, and composition of the material, a description of the equipment, and the origin, destination, point and time of entry into Iraq, and proposed use, of the item transferred. The information on imports and exports shall be provided at least 60 days before such transaction commences.

10. Iraq shall notify:

    (a) any changes in the inventory referred to in paragraph 22 of the plan, one month in advance;

    (b) any changes to nuclear programme referred to in paragraph 22 of the plan, one year in advance;

(c) complete description of the design information for any planned nuclear facility, installation or site or any planned modifications of any existing nuclear facility, installation or site, six months before the start of construction or modification of any such facility, installation or site;

11. All information required under the plan should include the corresponding text in English.

ANNEX 3

LIST OF ITEMS TO BE REPORTED TO THE AGENCY

Security Council Resolution 707 demands that Iraq, inter alia, halt all nuclear activities of any kind, except for certain uses of isotopes, until the Security Council determines that Iraq is in full compliance with the provisions of Resolution 707 and paragraphs 12 and 13 of Resolution 687 and that the IAEA determines that Iraq is in full compliance with the provisions of its safeguards agreement with the IAEA. Once these determinations have been made affirmatively by the Security Council and by the IAEA, Iraq may seek to initiate the nuclear activities which are not prohibited by Resolution 687. Approval by the Security Council for Iraq to initiate one or more of these nuclear activities may necessitate a corresponding amendment to this list.

Items marked * are specifically prohibited to Iraq under Resolution 687; the others may be prohibited if they are used, or are to be used, in activities prohibited under Resolution 687.

1. **Source materials (see Annex 1, para. 1.1)**

2. **Special fissionable materials (see Annex 1, para. 1.2)**
   *Special fissionable materials which fall within the definition of nuclear-weapon-usable materials are prohibited.

*3. **Nuclear-weapon-usable materials (see Annex 1, para 1.3)**

4. **Equipment or materials referred to in Section 2 of Memorandum B of INFCIRC/209/Rev. 1 and in the Annex to INFCIRC/209/Rev. 1**
   *All items included in INFCIRC/209/Rev. 1 which are used for enrichment and reprocessing are prohibited. *Any item to be used in any activity listed in items 2.1 to 2.9 of Annex 1 is also prohibited.

5. **EQUIPMENT AND MATERIALS USED IN URANIUM ENRICHMENT** including

***5.1 Rotor fabrication and assembly equipment and bellows-forming mandrels and dies**

(a) Rotor assembly equipment specially designed or prepared for assembly of gas centrifuge rotor tube sections, baffles, and end caps. Such equipment includes specially designed precision mandrels, clamps, and shrink fit machines.

(b) Rotor straightening equipment specially designed or prepared for alignment of gas centrifuge rotor tube sections to a common axis.

(c) Bellows-forming mandrels and dies, two-piece cylindrical with a single indented circumferential convolution bisected by the two halves.

***5.2 Centrifugal balancing machines**
Centrifugal balancing machines, fixed or portable, horizontal or vertical.

***5.3 Filament winding machines**
Filament winding machines in which the motions for positioning, wrapping, and winding fibers are coordinated and programmed in three or more axes, specially designed to fabricate composite structures or laminates from fibrous and filamentary materials and capable of winding cylindrical rotors.

***5.4 Centrifuge housing/recipients**
Components to contain the rotor tube assembly of a centrifuge enrichment machine.

***5.5 Aluminium, high-strength tube**
Cylindrical tubing in semifabricated or finished forms made of aluminium alloy

5.6 Fibrous and filamentary materials (high strength)
Fibrous and filamentary materials for use in composite structures

***5.7 Maraging steel**
Maraging steel (high strength) with an ultimate tensile strength of 2.050×10^9 N/m^2 (300,000 psi) or more.

5.8 Titanium
Cylindrical tubing in semi-fabricated forms made of high-strength titanium alloys

5.9 Spin-forming and flow-forming machines specially designed or adapted for use with numerical or computer controls and specially designed parts and accessories therefor.

6. CHLORINE TRIFLUORIDE

7. ELECTROLYTIC CELLS FOR FLUORINE PRODUCTION AND SPECIALLY DESIGNED PARTS AND ACCESSORIES THEREFORE

8. MASS SPECTROMETERS FOR URANIUM HEXAFLUORIDE

Mass spectrometers for uranium hexafluoride as follows.

***8.1 Mass spectrometers, magnetic or quadruple:**

8.1.1 Instruments having all of the following characteristics:
(a) Resolution of less than 1 atomic mass unit (amu) for molecular masses greater than 320 amu; and
(b) Electron-bombardment ionization source; and

8.1.2 Instruments having any of the following characteristics:
(a) Molecular beam ion sources;
(b) Ion source chambers constructed of or lined with nichrome or monel, or nickel plated;
(c) A collector system suitable for simultaneous collection of two or more isotopic species; and

***8.2 Sources for mass spectrometers having any of the following characteristics:**

(a) Molecular beam source;

(b) Ion source chambers constructed of or lined with nichrome or monel, or nickel plated; or

(c) Sources for mass spectrometers designed especially for use with UF_6.

***9. URANIUM HEXAFLUORIDE-RESISTANT GAUGES**

***10 URANIUM HEXAFLUORIDE-RESISTANT VALVES**

Valves, with a bellows seal, wholly made of or lined with aluminium, nickel, or alloy containing nickel, either manually or automatically operated and specially designed parts or accessories therefore.

11 LASERS AND EQUIPMENT CONTAINING LASERS AS FOLLOWS

*(a) Copper vapor lasers with 40 W average output power;

(b) Argon ion lasers with greater than 40 W average output power;

(c) Nd: YAG lasers that can be frequency doubled and after doubling have an average power output at the doubled frequency greater than 40 W;

*(d) Tunable pulsed dye laser amplifiers and oscillators, except single-mode oscillators, with an average power greater than 30 W, a repetition rate greater than 1 kHz and a wavelength between 500 nm and 700 nm;

(e) Tunable pulsed single-mode dye oscillators capable of an average power greater than 1 W, a repetition rate greater than 1 kHz, a pulse width less than 100 ns, and a wavelength between 500 nm and 700 nm.

(f) Alexandrite lasers with a bandwidth of 0.005 nm or less, a repetition rate greater than 124 Hz, and an average output power greater than 30 W;

*(g) Pulsed carbon dioxide lasers with a repetition rate greater than 250 Hz, an average output power greater than 2.5 kW, and a pulse length less than 200 ns;

(h) Pulsed excimer lasers (XeD, XeCl, KrF) with a repetition rate greater than 250 Hz and an average output power greater than 500W;

*(i) Free electron lasers.

12 PIPES, VALVES, FITTINGS

*Pipes, valves, fittings, heat exchangers, or magnetic, electrostatic, or other collectors made of graphite or coated in graphite, yttrium, or yttrium compounds resistant to the heat and corrosion of uranium vapor.

***13 RESINS AND ORGANIC COMPLEXING AGENTS CAPABLE OF SEPARATING ISOTOPES OF URANIUM**

Chemical exchange resin developed for the separation of isotopes of uranium and other fissile materials and organic complexing agents developed for the same purpose.

14 **SOLVENT EXTRACTION EQUIPMENT**

*Solvent extraction equipment suitable for use in the separation of uranium isotopes.

15 **ORDINARY AND SUPERCONDUCTING ELECTROMAGNETS**

Ordinary and superconducting electromagnets capable of creating magnetic fields of more than 2 teslas (20 kilogauss) as follows.

(a) ordinary and solenoidal superconductive electromagnets of more than 300 mm inner diameter except such magnets shipped as integral parts of medical nuclear magnetic resonance (NMR) imaging systems.

(b) ordinary and superconductive electromagnets with a diameter of 500 mm or greater except such magnets shipped as integral parts of NMR systems.

*16 **PROCESS CONTROL SYSTEMS FOR USE IN ENRICHMENT**

Process control systems configured for use in uranium enrichment, as follows:

(a) Computer systems configured to read process variables, compute control levels, and automatically adjust process variables for such units;

(b) Arrays of instrumentation for monitoring process variables such as temperature, pressure, pH, fluid level, and flow rate selected for specific production process and designed to operate in the hostile environment required by each process.

*17 **EQUIPMENT SPECIALLY DESIGNED FOR THE PREPARATION OF FEED MATERIALS FOR ENRICHMENT PROCESSES, INCLUDING THE PREPARATION OF UF_6 AND UCl_4.**

*18 **FEED MATERIALS FOR ENRICHMENT PROCESSES INCLUDING UF_6 AND UCl_4.**

NUCLEAR REACTORS, INCLUDING CRITICAL AND SUB-CRITICAL ASSEMBLIES, REACTOR EQUIPMENT AND MATERIALS

19 REACTOR SYSTEMS, SUB-SYSTEMS, EQUIPMENT AND COMPONENTS

19.1 Reactor vessels
Reactor vessels, including pressurized and unpressurized types.

19.2 Reactivity control mechanisms, devices and systems
Reactivity control mechanisms, devices and systems, including manual, electro-mechanical, hydraulic, pneumatic and chemical injection/removal-type systems.

19.3 Reactor process monitoring, measurement and control systems
Reactor process monitoring, measurement and control systems, sub-systems and components. All analog and digital process control computers and hydraulic and pneumatic process monitoring and control instruments and equipment.

19.4 Reactor fuel charging and discharging systems
Reactor fuel charging and discharging systems and equipment, including manual, electro-mechanical, hydraulic and pneumatic systems and components.

19.5 Calandrias
Calandrias, calandria tubes, pressure tubes and other fuel channel assemblies and components.

19.6 Primary and secondary heat transport and removal systems
Primary and secondary heat transport and removal systems, including steam generators, heat exchangers, coolant purification, coolant recovery, high and low pressure injection and circulating pumps, pressure relief devices and other pressure-retaining components especially designed, manufactured or prepared for use in such systems.

PLANTS AND EQUIPMENT USED IN REPROCESSING

*20 PROCESS CONTROL SYSTEMS FOR USE IN REPROCESSING

Process control systems configured for use in reprocessing, as follows:

(a) Computer systems configured to read process variables, compute control levels, and automatically adjust process variables for such units;

(b) Arrays of instrumentation for monitoring process variables such as temperature, pressure, pH, fluid level, and flow rate selected for the specific production process and designed to operate in the hostile environment required by each process.

*21 HOT CELLS AND ASSOCIATED EQUIPMENT

Hot cells and associated equipment for the handling and processing of irradiated fuel on any scale.

*22 OTHER EQUIPMENT FOR THE REPROCESSING OF IRRADIATED FUEL

Equipment for the reprocessing of irradiated fuel by methods other than solvent extraction, e.g., ion-exchange, fluoride volatility, pyrometallurgical.

*23 REPROCESSING WASTE TREATMENT

Plants and equipment for the treatment of wastes from reprocessing.

OTHER EQUIPMENT AND MATERIALS

24 Plants and equipment used for the following processes

(a) Prospecting for ores containing source materials;
(b) Mining of ores containing source materials;
(c) Separation of source material from ores and other naturally occurring materials to form concentrates;
(d) Preparation of metals, alloys, or any chemical compound containing source material or uranium enriched to less than 20% in uranium-235;
(e) Fabrication of source material or uranium enriched to less than 20% in uranium-235 into a form suitable for irradiation in a nuclear reactor;
(f) Treatment of wastes from mining, conversion and fabrication processes and plants.

25 Turning machines

*Turning machines (lathes) having one or more of the following characteristics:

(a) Vacuum chucks suitable for holding hemispherical parts;

(b) Machines installed within glove boxes.

26 High temperature furnaces

*Vacuum or controlled environment (inert gas) furnaces including induction, arc, plasma and electron beam furnaces, capable of operation above 700°C; and especially designed power supplies therefor.

***27 Crucibles resistant to liquid fissile metals**

Crucibles made of materials resistant to liquid fissile metals and designed to avoid nuclear criticality.

28 Isostatic presses

Isostatic presses capable of achieving a maximum working pressure of 69 MPa or greater and specially designed dies and molds, components, accessories and controls and *specially designed software* therefor.

29 Beryllium

Beryllium as follows:

(a) Metal;

(b) Alloys containing more than 50% of beryllium by weight;

(c) Compounds containing beryllium;

(d) Manufactures thereof; and

(e) Waste and scrap;

except

(a) Metal windows for X-ray machines;

(b) Oxide shapes in fabricated or semi-fabricated forms specially designed for electronic component parts or as substrates for electronic circuits;

(c) Naturally-occuring compounds containing beryllium.

30 Calcium
High purity calcium containing both less than 0.1% by weight of impurities other than magnesium and less than 10 ppm (parts per million) of boron.

31 Lithium

*(a) Lithium enriched in lithium-6;

*(b) Facilities or specialized equipment for the separation of the lithium-6 isotope;

except

for use in thermoluminescence dosimetry.

32 Magnesium
High purity magnesium containing both less than 0.02% by weight of impurities other than calcium and less than 10 ppm (parts per million) of boron.

33 Tantalum
Tantalum sheet with a thickness of 2.5 mm or greater.

34 Plutonium, uranium-233 and enriched uranium contained in irradiated fuel.

35 Tungsten
Parts made of tungsten, tungsten carbide, or tungsten alloys (greater than 90% tungsten) having a mass greater than 20 kg;

except

parts specifically designed for use as weights or gamma-ray collimators.

36 Hafnium
Hafnium in any metallic, alloy or oxide form.

37 Boron
Boron and boron compounds and mixtures in which the boron-10 isotope is more than 20% of the total boron content.

IMPLOSION SYSTEMS DEVELOPMENT

***38 Hydrodynamic testing facilities**
Hydrodynamic test facilities capable of handling the detonation of high explosive charges of 1 kg or greater and suitable for use of appropriate diagnostic instrumentation.

***39 Computers**
Computer centers and networks using hydrodynamics codes, neutronic codes, and/or equation-of-state and nuclear data files.

40 Flash X-ray equipment
Flash X-ray generators or pulsed electron accelerators with peak energy of 500 keV or greater.

***41 Gun systems for large masses**
Gun systems for accelerating large masses (greater than 5 kg) to low velocity using chemical propellants similar to those used in artillery, usually associated with timing, velocity, and other diagnostics.

***42 Shells, hollow spheres or portions thereof**
Shells, hollow spheres, or portions of spheres made of high explosives or metals listed in 2 and molds for such parts.

43 Photographic equipment

*(a) Mechanical framing cameras with recording rates greater than 225,000 frames per second; streak cameras with writing speeds greater than 0.5 mm per microsecond; and parts and accessories thereof, including synchronizing electronics specially designed for this purpose and rotor assemblies (including turbines, mirrors, and bearings).

*(b) Electronic streak cameras capable of 50 ns or less time resolution and framing cameras capable of 50 ns or less frame exposure time including single-frame cameras, and streak and framing tubes usable in such cameras.

***44 Transient recorders and/or digital oscilloscopes**

Transient recorders and/or digital oscilloscopes using analog-to-digital conversion techniques capable of storing transients by sequentially sampling one-shot input signals at successive intervals of less than 20 nanoseconds (greater than 50 million samples per second), digitizing to 8 bits or greater resolution, and storing 256 or more samples.

45 Analog oscilloscopes and cameras

*(a) Analog oscilloscopes suitable for triggered single-sweep operation with a bandwidth greater than 250 MHz and associated oscilloscope cameras;

(b) Analog oscilloscopes in the 30-250 MHz range and associated oscilloscope cameras.

***46 Specialized equipment for hydrodynamic experiments**

EXPLOSIVES AND RELATED EQUIPMENT

***47 Detonators and multipoint initiator systems**

Detonators and multipoint initiation systems:

(a) Electrically driven explosive detonators of the types exploding bridge (EB), exploding bridgewire (EBW), slapper, or exploding foil initiators (EFI);

(b) Specially designed parts or bodies for any of the detonators described above; or

(c) Arrangements of multiple detonators designed to nearly simultaneously initiate an explosive surface from a single firing signal.

(d) explosive lenses designed to uniformly initiate the surface of a high-explosive charge.

***48 Firing sets and equivalent high-current pulsers (for controlled detonators)**

(a) Explosive detonator firing sets designed to drive multiple controlled detonators covered under item 4.1. above;

(b) Modular electrical pulse generators (pulsers) designed for portable, mobile, or rugged use (including xenon flashlamp drivers) having the following characteristics:

- capable of delivering their energy in less than 15 microseconds;
- having an output greater than 500 A; and
- having a rise time of less than 10 microseconds into loads of less than 5 ohms.

49 High explosives
High explosives including the following:

(a) Cyclotetramethylenetetranitramine (HMX);

(b) Cyclotrimethylenetrinitramine (RDX);

(c) Triaminotrinitrobenzene (TATB);

(d) Pentaerythritoltetranitrate (PETN),

except

when contained in pharmaceuticals;

(e) Hexanitrostilbene (HNS),

except

when contained in pharmaceuticals.

OTHERS

50 Neutron generator systems

*Neutron generator systems utilizing electrostatic acceleration to induce a tritium-deuterium nuclear reaction; and specially designed parts (including tubes) thereof.

***51 Tritium and tritium related plants, equipment, and materials**

(a) Tritium, including compounds and mixtures containing tritium in which the ratio of tritium to hydrogen by atoms exceeds 1 part in 1000.

<u>except</u>

tritium in luminescent devices (e.g. safety devices installed in aircraft, watches, runway lights)

(b) Facilities or plants for the production, recovery, extraction, concentration, or handling of tritium, and equipment and materials suitable for use therein, including the following:

- Tritium storage, separation, purification, and pumping systems using metal hydrides as the storage, pumping or purification medium;

- Pumps or compressors that are constructed without plastic parts and which are designed so that lubricating oils are not in contact with the process gas.

52 Deuterium and deuterium-related plants, equipment and materials

(a) Deuterium, including compounds and mixtures containing deuterium in which the ratio of deuterium to hydrogen by atoms exceeds 1 part in 5000.

(b) Facilities or plants for the production, recovery, extraction, concentration or handling of deuterium, and equipment and materials suitable for use therein

c) Compressors and blowers specially designed or prepared to be corrosion resistant to H_2S and having all of the following characteristics:

(i)An inlet operating pressure of 260 to 280 psi-gauge, with a differential pressure between outlet and inlet of approximately 30 psi;

(ii)a suction volume of 120,000 scfm;

(iii)capable of sustaining the above inlet pressure and suction volume in H_2S gas saturated with water vapor.

d) Specialized packings made of phosphor bronze mesh designed for use in vacuum distillation towers, suitable for use in separating heavy from light water.

53 Alpha sources

All alpha-emitting radionuclides and equipment containing alpha-emitting radionuclides meeting all of the following specification

(a) The radionuclides have an alpha half-life of 10 days or greater but less than 200 years;

(b) The radionuclides are contained in compounds or mixtures with a total alpha activity of 37 GBq per kilogram (1 curie per kilogram) or greater; and

(c) The radionuclides have a total alpha activity of 3.7 GBq (100 millicuries) or greater;

except

radionuclides in medical implant devices.

54 Photomultiplier tubes of the following descriptions:

a) An anode pulse rise time of less than 1 ns; or
b) Containing microchannel plate electron multipliers.

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55 Capacitors with either of the following sets of characteristics:

A voltage rating greater than 1.4 kV having all of the following characteristics:

1) Energy storage greater than 10 J;
2) Capacitance greater than 0.5 μF; and
3) Series inductance less than 50 nH;

or

A voltage rating greater than 750 V having both of the following characteristics:

1) Capacitance greater than 0.25 μF; and
2) Series inductance less than 10 nH.

56 High-purity (99.99%) bismuth with very low silver content (less than 10 parts per million)

57 "Robots" and specially designed robot controllers, and robot "end-effectors" having any of the following characteristics:

(a) Specially designed to comply with national safety standards applicable to explosive environments (for example, meeting electrical code ratings for explosive environments);

(b) Specially designed or rated as radiation hardened more than necessary to withstand normal industrial (i.e., non-nuclear industry) ionizing radiation.

58 Pulse amplifiers with gain greater than 6 decibels and with a baseband bandwidth greater than 500 megahertz (having the low frequency half-power point at less than 1 MHz and the high frequency half-power point at less than 1 MHz and the high frequency half-power point greater than 500 MHz) and output voltage greater than 2 volts into 55 ohms or less (this corresponds to an output greater than 16 dbm in a 50 ohm system).

59 Switching devices, as follows:

(a) Cold-cathode tubes (including gas krytron tubes and vacuum sprytron tubes), whether gas filled or not, operating similarly a spark gap, containing three or more electrodes, and having all of the following characteristics:

(1) Anode peak voltage rating of 2500 V or more;
(2) Anode peak current rating of 100 A or more; and
(3) Anode delay time of 10 microseconds or less;

(b) Triggered spark-gaps having an anode delay time of 15 microseconds or less and rated for a peak current of 500 A or more;

(c) Hydrogen/hydrogen-isotope thyratrons of ceramic-metal construction and rated for a peak current of 500 A or more.

60 Vibration test equipment using digital control techniques and feedback or closed loop test equipment and software therefore capable of vibrating a system at 10 g RMS or more between 20 Hz and 2000 Hz, imparting forces of 50 kN (11,250 lbs) or greater.

61 Electronic digital computers with a "composite theoretical performance" (CTP) of 12.5 million theoretical operations per second (Mtops) or greater except:

(a) Computers contained in or associated with other equipment or systems where the computers are essential for the operation of the other equipment or systems and the computers are not the principal element of the other equipment or systems, or

(b) Computers essential for medical applications and incorporated in equipment or systems designed or modified for an identifiable and dedicated medical applications.

62 Electronic equipment for time delay generation or time interval measurement:

(a) Digital time delay generators with a resolution of 500 nanoseconds or less over time intervals of 1 microsecond or greater,

(b) Multichannel (three or more) or modular time interval meters and chronometry equipment with time resolution less than 50 nanoseconds over time ranges greater than 1 microsecond.

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ANNEX 4
LIST OF NUCLEAR ACTIVITIES PERMITTED UNDER SECURITY COUNCIL RESOLUTION 707

The following peaceful applications of isotopes imported from other States after prior approval by the IAEA are permitted:

1. AGRICULTURAL APPLICATIONS

1.1 Soil fertility, irrigation and crop production

1.2 Plant breeding and genetics

1.3 Animal production and health

1.4 Insect and pest control

1.5 Food preservation

1.6 Other uses as approved by the IAEA

2. INDUSTRIAL APPLICATIONS

2.1 Radiography and other non-destructive testing methods

2.2 Industrial process control and quality control

2.3 Radiotracer applications in oil, chemical and metallurgical processes

2.4 Development of water and mineral resources

2.5 Industrial radiation processing

2.6 Other uses as approved by the IAEA

3. MEDICAL APPLICATIONS

3.1 Diagnostic and therapeutic medicine including dosimetry

3.2 Radiotherapy by teletherapy and brachytherapy

3.3 Nutrition and health-related environmental studies

3.4 Other uses as approved by the IAEA